

MAY 1961 - 17

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**NEWS  
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HYDRAULICS  
DIVISION  
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JOURNAL OF THE HYDRAULICS DIVISION

PROCEEDINGS OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS



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## DIVISION ACTIVITIES HYDRAULICS DIVISION

### Proceedings of the American Society of Civil Engineers

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#### NEWS

May, 1961

#### THE PURPOSE OF THE HYDRAULICS DIVISION

"The advancement and dissemination of scientific and engineering knowledge in all branches of hydraulics, hydrology, hydraulic engineering and water resources. In particular this shall embrace meteorology and hydrology as the sciences dealing with the occurrence of water in the atmosphere, on the earth surface and in the ground, fluid mechanics for the understanding of all flow phenomena, applied hydraulics for the design and planning of hydraulic structures and of comprehensive systems, and those social, economic and administrative aspects basic to the conservation and utilization of water as an essential natural resource."

#### COMMITTEES

##### Committee on Standards

Mr. Norbert H. Leupold resigned in February, leaving this committee composed of Chairman Frank B. Campbell, Rolland W. Carter, and Carl E. Endsvater.

##### Committee on Hydraulic Structures

Mr. Nicholas L. Barbarossa, Chief, Hydraulic Section, Missouri River Division, Corps of Engineers, Omaha, Nebraska, has accepted appointment as new member to this committee to complete the term of Mr. Marvin J. Webster which is to expire in October 1964. Mr. Webster's resignation was necessitated by his departure for a 2-year assignment of work in Lahore, West Pakistan.

##### Task Force on Flood Plain Regulations

Mr. Robert E. Cyphers, Jr., State Department of Conservation, Trenton, New Jersey, has accepted appointment to fill the vacancy created by the resignation in January of Mr. George R. Shanklin.

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1961-17--2

HY 3

May, 1961

### Task Force on Salt Water Intrusion

The following three men have been selected to serve on this new task force:

Norbert J. Luszynski (Chairman)  
Clarence B. Sherwood  
David B. Willets

The new appointments are for 2 years, after which an annual rotation of members will be adopted. It is expected that the new task force will hold an organizational meeting this spring.

### Task Force on the Hydraulics of Bridges

Mr. Douglas E. Schneible, U. S. Bureau of Public Roads, Kansas City, Missouri, has accepted appointment to the task force to fill the vacancy created last year by the untimely death of Dr. H. K. Liu.

### TENTH HYDRAULICS DIVISION CONFERENCE Champaign-Urbana, Illinois August 16-18, 1961

Now is the time to plan to attend this conference with your family while on vacation in the Land of Lincoln. The Central Illinois Section and the University of Illinois are co-hosts. The following briefly describes the stimulating program and some of the other interesting activities being planned.

### Housing and Dining Facilities

Dormitory accommodations will be available at the University and all meals may be obtained in an adjacent air-conditioned dining hall. Several hotels and motels are located within a 5-mile radius of the campus. Additional information may be obtained by writing to Professor J. M. Robertson, 125 Talbot Laboratory, University of Illinois, Urbana, Illinois.

### Conference Luncheon, August 16

Mr. William H. Wisely, Executive Secretary of the American Society of Civil Engineers, will speak on "Society Affairs." The luncheon will be in the air-conditioned dining hall adjacent to the dormitory reserved for conference participants.

### Robert Allerton Park, August 16

A visit to this unique 1,500-acre Park is a family event scheduled for the late afternoon and evening. While here, everyone will want to see The Lost Garden, The Centaur, The Sun Singer, The Garden of The Fu Dogs, and the other intriguing scenes the park has to offer. The evening meal will be a typical Central Illinois picnic of Illinois Fried Prairie Chicken served in this scenic park.

### Evening Banquet, August 17

Mr. Floyd Dominy, Commissioner of The Bureau of Reclamation will

peak on a timely subject of interest to hydraulic engineers and their wives. The banquet will be in the air-conditioned Ball Room of the Illini Union.

### Lincoln Tour, August 18

This is an all-day tour in air-conditioned buses for the wives and children to Springfield, Illinois and New Salem State Park. The group will visit Lincoln's Home and Tomb and the restored village of New Salem, where Lincoln lived and worked as a young man. (Many of New Salem's historical scenes are shown in the March 4, 1961 issue of Saturday Evening Post.) Lunch will be served at New Salem.

### Young People's Activities

The young people will enjoy the swim parties at the new Champaign Park swimming pool and an outing at the nearby Lake of the Woods.

### Technical Program

The technical sessions will be held in the air-conditioned auditorium of Gregory Hall on the campus. The technical program has the following sessions and papers scheduled.

#### Wednesday morning - August 16 - Ground Water Hydrology Session

residing: Maurice L. Dickinson, Chairman, Executive Committee and William F. Guyton, Member, Committee on Ground Water Hydrology

##### Theoretical and Practical Aspects of Recharge through Wells

Paul Baumann, Consulting Engineer, Sierra Madre, California

##### Modern Well Design and Construction Procedures

Harman F. Smith, Head, Engineering Section, Illinois State Water Survey Division, Urbana, Illinois

##### Design and Construction of Water Wells

Owen F. Jensen, Jr., Vice President, Layne Texas Company, Houston, Texas

##### Well Logging and Explorational Techniques

Paul H. Jones, Research Geologist, U. S. Geological Survey, Idaho Falls, Idaho

#### Wednesday afternoon - August 16 - Sedimentation Session

residing: Arno T. Lenz, Secretary, Executive Committee, and Peter S. Eagleson, Member, Committee on Sedimentation

##### Density and Distribution of Reservoir Sediments

Herman G. Heinemann, Project Supervisor, Agricultural Research Service, Lincoln, Nebraska

Relation Between Reservoir Sediment Deposition and Selected Watershed Variables

Roger L. Corinth, Assistant Engineer, Illinois State Water Survey Division, Urbana, Illinois

Sediment Deposition in Small Reservoirs Resulting from Urbanization

Harold Buy, Hydraulic Engineer, and George E. Ferguson, Division Hydrologist, U. S. Geological Survey, Water Resources Division

Boundary Shear Stress Distribution in Trapezoidal Channel Curves

Arthur T. Ippen, Professor of Hydraulics, Department of Civil and Sanitary Engineering, MIT, Cambridge, Massachusetts, and Philip A. Drinker, Geologist, Agricultural Research Service, assigned to Hydrodynamics Laboratory, MIT, Cambridge, Massachusetts

Thursday morning - August 17 - Surface Water Hydrology Session

Presiding: Herbert S. Riesbol, Member, Executive Committee and Victor A. Koelzer, Member, Committee on Surface Water Hydrology

The Economic Significance of Urban Drainage Design

William J. Bauer, Consulting Engineer, Member, Flood Control Advisory Committee, N.E., Illinois Metropolitan Area Planning Commission, Chicago, Illinois

A Comparison of Urban and Rural Runoff

John B. Stall and H. F. Smith, Illinois State Water Survey Division, Urbana, Illinois

Analysis of Urban Runoff Hydrographs

Clint J. Kiefer, Bureau of Engineering, Department of Public Works, City of Chicago, Chicago, Illinois

Hydrology of Urban Areas

John C. Geyer, Department of Sanitary Engineering and Water Resources, The Johns Hopkins University, Baltimore, Maryland

Thursday afternoon - August 17 - Hydraulic Structures Session

Presiding: Eugene P. Fortson, Jr., Vice Chairman, Executive Committee, and Harold K. Pratt, Chairman, Committee on Hydraulic Structures

Hydrologic Design of Culverts

Ven Te Chow, Professor of Hydraulic Engineering, University of

Illinois, Urbana, Illinois and Consulting Editor of Fluid Science and Engineering, McGraw Hill Book Company, Inc., New York

### Hydraulics of Conventional Highway Culverts

Herbert G. Bossy, Highway Research Engineer, Bureau of Public Roads, Washington, D. C.

### Improved Inlet Structures for Culverts

John L. French, Hydraulic Engineer, Fluid Mechanics Section, National Bureau of Standards, Washington, D. C.

## Friday morning - August 18 - Hydromechanics Session

Presiding: Eugene P. Fortson, Jr., Vice Chairman, Executive Committee, and Frederick R. Brown, Member, Committee on Hydromechanics

### Problems Created by Cavitation Phenomena

Frederick R. Brown, Civil Engineer, Chief, Hydrodynamics Branch, U. S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi

### Mechanics of Cavitation

Virgil E. Johnson, Hydrodynamics, Incorporated, Research in Hydrodynamics

### Scale Effects Involved in Experimental Work

James M. Robertson, Professor, Department of Theoretical and Applied Mechanics, College of Engineering, University of Illinois, Urbana, Illinois

### Design Procedures

Donald Colgate, Hydraulic Engineer, U. S. Bureau of Reclamation, Denver, Colorado, and Rex A. Elder, Head, Hydraulic Laboratory, Tennessee Valley Authority, Knoxville, Tennessee

## Friday afternoon - August 18 - Hydrometeorology and Flood Control Joint Session

Presiding: Herbert S. Riesbol, Member, Executive Committee and Wyndham J. Roberts, Member, Committee on Hydrometeorology

### Joint Flood Control Operating Center of the State of California, U. S. Corps of Engineers and U. S. Weather Bureau

Carl A. Werner, Principal Hydraulic Engineer, State Department of Water Resources; Ronald H. Thompson, Chief, Operations Branch, Sacramento District, Corps of Engineers; A. L. Zimmerman, Supervising Meteorologist-Hydrologist, Sacramento Office, U. S. Weather Bureau

Studies of Hydrometeorological Factors Influencing Severe Rainstorms on Small Watersheds

Glenn E. Stout, Head of the Meteorology Section and Floyd A. Huff, Meteorologist, Illinois State Water Survey

Present Status and Future Utilization of Radar, Meteorological Satellites and Quantitative Precipitation Forecasts in the Field of Hydrology

Richard D. Tarble, David W. Holmes and Jerrold A. LaRue, U. S. Weather Bureau

Meteorological Tour

A tour of the Illinois State Survey Meteorology Laboratory at the University of Illinois Airport will feature a demonstration of weather radar equipment.

Post Convention Tour, August 19

This morning field trip will take those interested to the National Petro-Chemical Corporation's modern plant at Tuscola, Illinois. The trip will include inspection of the plant's unique water supply and disposal systems.

**GENERAL NEWS**

Symposium on Hydraulic Structures

Mr. N. S. Govinda Rao, Professor of Civil and Hydraulic Engineering, Indian Institute of Science, Bangalore 12, India, has submitted the following announcement. Anyone interested can get more details from him.

"A symposium on Analysis and Design of Hydraulic Structures is proposed to be conducted at the Indian Institute of Science in October 1961, to provide an opportunity to the designing engineers and research workers to meet on a common platform for mutual discussions and exchange of thought. Those who wish to contribute papers may send the abstracts to the Professor of Civil and Hydraulic Engineering at the Institute before 30th June 1961 and the full text by 31st August 1961."

Symposium on Basic Research in Civil Engineering Fields Related to Water Resources

The American Society of Civil Engineers, the Bureau of Reclamation, and Colorado State University are jointly sponsoring a 4-day National Symposium during June 12-15, 1961, inclusive, on the campus of Colorado State University, Fort Collins, Colorado, to explore the critical needs for basic research in selected specific fields of civil engineering related to water resources. The symposium will endeavor to stimulate interest in the accomplishment of this needed research by recommending specific research projects which can be profitably investigated, giving reasons for their selection and suggesting where and how they may be accomplished.

Separate panels will convene to discuss basic research needs in each of seven selected specific fields related to water resources. The panelists,

omprising from 5 to 10 invited leading engineers and scientists for each panel, will represent educational institutions, Government agencies, selected state agencies, private concerns, and other organizations in the United States and foreign countries.

The first one-half day of the symposium will be for orientation, including talks on the purpose and scope of the program with a keynote speech by Mr. Alfred R. Golze, Chief Engineer, California State Division of Water Resources. The participants will separate into panels for separate discussions of the scheduled subjects on the afternoon of the first day and through the second day. Each panel will make a detailed report on the third day at an assembly of all panels. The fourth day will be used to prepare the material for inclusion in the Symposium Proceedings. A summary of the accomplishments of the Symposium will be given during the closing hours of the fourth day. A banquet is planned for the evening of the third day.

The separate panel deliberations will be restricted to the invited panelists. However, the first one-half day orientation session and the last 2 days of reports, summaries, conclusions, and recommendations are open to all who are interested. Further details regarding time schedule and location of these open sessions can be obtained from Mr. W. H. Price, Bureau of Reclamation, Denver Federal Center, Denver 25, Colorado. The proceedings of the Symposium will be published by the American Society of Civil Engineers for dissemination to all organizations interested in water resources development.

Editor's Note. - Do not order the Proceedings until their availability is firmly announced.)

Following is a list of the panel subjects and chairmen:

Subject No. 1: Fundamental Research in the Static and Dynamic Behavior of Soils

Panel Chairman: Professor R. E. Fadum, Head, Department of Civil Engineering, North Carolina State College, Raleigh, North Carolina

Subject No. 2: Physics and Chemistry of Static and Dynamic Behavior of Rock

Panel Chairman: Dr. J. W. Vandervilt, President, Colorado School of Mines, Golden, Colorado

Subject No. 3: Physics and Chemistry of Static and Dynamic Behavior of Concrete

Panel Chairman: Mr. Douglas McHenry, Director, Research and Development Division, Portland Cement Association, Skokie, Illinois

Subject No. 4: Fluvial Hydraulics

Panel Chairman: Dr. Arthur T. Ippen, Professor of Hydraulics, Massachusetts Institute of Technology, Cambridge, Massachusetts

Subject No. 5: Hydraulics of Water Conveyances

Panel Chairman: Dr. John S. McNown, Dean, School of Engineering, University of Kansas, Lawrence, Kansas

Subject No. 6: Flow in Porous Media

Chairman: Dr. D. F. Peterson, Dean, College of Engineering and Technology, Utah State University, Logan, Utah

Subject No. 7: Conservation and Utilization of Water

Panel Chairman: Mr. H. O. Banks, Vice President, Leeds, Hill, and Jewett, 609 South Grande Avenue, Los Angeles 17, California

Senate Select Committee on National Water Resources

The final report of Senator Kerr's Select Committee on National Water Resources, representing the completion of 2 years of detailed study, was released on January 30, 1961, as Senate Report Number 29. A summary of the report appears in the February 2, 1961 issue of Engineering News Record. However, the entire report and all of the 32 committee prints will be of interest to members of the Hydraulics Division because of the close relation between the interests of the Division and the scope of the Select Committee studies.

New Light Weight Bed Material Sediment Sampler

The Federal Inter-Agency Sedimentation Project of the Inter-Agency Committee on Water Resources has developed a new light weight sediment sampler that is available for field trials or purchase by Federal agencies. The sampler weighs 30 pounds and is designed to be suspended from a hand line from a boat or bridge. A special spring, exerting a constant force, closes the clamshell-like bucket when the sampler comes to rest on the streambed. Inquiries can be directed to the Federal Inter-Agency Sedimentation Project, St. Anthony Falls Hydraulic Laboratory, Hennepin Island and Third Avenue, SE, Minneapolis 14, Minnesota.

#### NEW PUBLICATIONS

The following is a bibliographical listing of separate publications (as opposed to papers in technical journals) which are recommended by some members of the Division as being of value to the interests of the Hydraulics Division and which do not appear in other lists which are widely distributed among hydraulics men (for example citation will not be made to articles or books announced in "Civil Engineering," in the indexes published by the U. S. Government Printing Office, or in other similar lists). Inclusion or noninclusion of a citation in the list does not imply any degree of endorsement by the Hydraulics Division or your editor. Citations for inclusion in this current list were made by Dr. D. K. Todd (28), Blair T. Bower (7), and H. R. McDonald (4). All members are encouraged to submit appropriate and complete recommendations for the list. Your comments regarding this new listing will be appreciated.

1. Andres, B. D., Effect of Synthetic Detergents on the Ground Waters of Long Island, New York, Research Rep. No. 6, New York Water Pollution Control Board, Albany, 1960.
2. Anon., Clean Water--A chart book of America's water needs, 1900-1980 U. S. Public Health Service, Washington, D. C., 48 pp., 1960.

3. Anon., Dynamic planning--First step in water resources development for New York State, New York Temporary State Commission on Water Resources Planning, Albany, 260 pp., 1960.
4. Anon., Feasibility of Federal-Interstate Partnership in Water Resource Development, Water Research Foundation for the Delaware River Basin, Philadelphia, 41 pp., 1960.
5. Anon., Limits of state water responsibility, Trans. Commonwealth Club of California, Volume 54, No. 2, San Francisco, 51 pp., 1960.
6. Anon., Ohio water management conference, Ohio Water Commission, Columbus, 154 pp., 1960.
7. Anon., Oklahoma's Water Resources, 1960, Oklahoma Water Resources Board, State Capitol, Oklahoma City, Oklahoma, 1960, 44 pp. (brochure).
8. Anon., Our National water resources, Current Issues Ser. No. 7, National Assn. of Manufacturers, New York, 35 pp., 1960.
9. Anon., Proceedings, Fourth Annual Arizona Watershed Symposium, Arizona Water Resources Committee and Watershed Management Division, State Land Department, State of Arizona, Phoenix, 44 pp., 1960.
0. Anon., Reclamation Project Data, Bureau of Reclamation, U. S. Department of the Interior, U. S. Government Printing Office, Washington, D. C., 1961, 890 pp.
1. Anon., Report of the Select Committee on National Water Resources, Senate Report No. 29, 87th Congress 1st Session, U. S. Government Printing Office, Washington, D. C., 147 pp., 1961.
2. Anon., Sea water intrusion in California, Bull. 63, Appendices C-E, California Department of Water Resources, Sacramento, 1960.
3. Anon., Summary Water Laws of Oklahoma and Rules and Regulations, Oklahoma Water Resources Board, State Capitol, Oklahoma City, Oklahoma, August 1960, 40 pp.
4. Anon., Water and watersheds, American Forest Products Institute, Washington, D. C., 11 pp., 1960.
5. Ballis, G., The California water plan--an evaluation, Public Affairs Institute, Washington, D. C., 7 pp., 1960.
6. Ellis, D. W., and G. W. Edlen, Jr., Kansas streamflow characteristics, Pt. 3, Flood frequency, Tech. Rep. No. 3, Kansas Water Resources Board, Topeka, 221 pp., 1960.
7. Fox, Irving K., Water supply, demand, and the law, Reprint No. 15, Resources for the Future, Washington, D. C., 23 pp., 1960.
8. Hartman, M. A., Determining rainfall-runoff-retention relationships, Agric. Exp. Station, Texas Agric. and Mech. College, College Station, 7 pp., 1960.
9. Himes, R. C., S. E. Miller, W. H. Mink, and H. L. Goering, Evaluation of the zone-purification process as a method of preparation of potable water from sea water, Research and Dev. Prog. Rep. No. 36, U. S. Office of Saline Water, Washington, D. C., 27 pp., 1960.

20. Hirshleifer, J., J. D. DeHaven, and J. W. Milliman, Water supply: Economics, technology, and policy, University of Chicago Press, Chicago, Illinois, 378 pp., 1960.
21. Huberty, M. R., and V. Lawton (editors), Proceedings: Conference on water research in the University of California, Progress Rep. No. 2, Water Resources Center, University of California, Los Angeles, 201 pp., 1960.
22. Hutchins, Wells A., The Oklahoma Law of Water Rights, Oklahoma Water Resources Board in cooperation with Production Economics Research Branch, Agricultural Research Service, U. S. Department of Agriculture, Oklahoma City, Oklahoma, July 1960, 81 pp.
23. Kerr, R. S., Land, wood and water, Fleet Publishing Corporation, New York, 380 pp., 1960.
24. Krutilla, J. V., Sequence and timing in river basin development with special application to Canadian-U. S. Columbia River Basin planning, Resources for the Future, Washington, D. C., 34 pp., 1960.
25. Kunkel, F., and L. C. Dutcher, Data on water wells in the Willow Springs, Gloster, and Chaffee areas, Kern County, California, Bull. 91-4, California Department of Water Resources, Sacramento, 85 pp., 1960.
26. Lacey, R. E., E. W. Long, and C. E. Feazel, Development, construction, and testing of osmionic demineralizers, Research and Development Progress Report No. 38, U. S. Office of Saline Water, Washington, D. C., 90 pp., 1960.
27. Martin, R. C., Water for New York: A study in state administration of water resources, Syracuse University Press, Syracuse, New York, 264 pp., 1960.
28. Martin, R. C., and others, River basin administration and the Delaware, Syracuse University Press, Syracuse, New York, 390 pp., 1960.
29. McGauhey, P. H., and H. Erlich, Economic evaluation of water, Part I: search for criteria, Water Resources Center Cont. No. 13, University of California, Berkeley, 136 pp., 1960.
30. National Reclamation Association and Association of Western State Engineers, A Summary of Western State Activities in the Field of Water Resources, Washington, 86 pp., 1960.
31. Page, R. W., and W. R. Moyle, Jr., Data on water wells in the Eastern part of the Middle Mojave Valley area, San Bernardino County, California Bull. 91-3, California Department of Water Resources, Sacramento, 223 pp., 1960.
32. Pollak, F. S., Editor, Resources Development: Frontiers for Research, Papers of the Western Resources Conference 1959, Boulder, 333 pp., 1960.
33. Salzman, M. H., New water for a thirsty world, Science Foundation Press, Los Angeles, California, 210 pp., 1960.
34. Sheaffer, John R., Flood Proofing: An Element in a Flood Damage Reduction Program, University of Chicago Department of Geography Research Paper No. 65, Chicago, 198 pp., 1960.

- . Thompson, J. T., Public administration of water resources, Public Affairs Ser. No. 43, Institute of Public Affairs, University of Texas, Austin, 172 pp., 1960.
- . Tolley, G. S. and F. E. Riggs, Editors, Economics of Watershed Planning, Iowa State University Press, Ames, 339 pp., 1961.
- . Tribus, M., and others, Thermodynamic and economic considerations in the preparation of fresh water from the sea, Water Resources Center Cont. No. 30, University of California, Los Angeles, 1960.
- . Witmer, T. R., H. Chilson, and P. W. Morton, Federal water rights legislation, Committee on Interior and Insular Affairs, House of Representatives, Washington, D. C., 60 pp., 1960.
- . Woolhiser, D. A., and H. C. Schwalen, Area-depth-frequency relations for thunderstorm rainfall in Southern Arizona, Tech. Paper 527, University of Arizona Agric. Exp. Station, Tucson, 7 pp., 1960.

#### FOR YOUR CALENDAR

##### CCE Meetings

August 16-18, 1961	Hydraulics Division Conference, Urbana, Illinois
October 16-20, 1961	ASCE, New York Convention
February 19-23, 1962	ASCE, Houston Convention
May 14-18, 1962	ASCE, Omaha Convention
August, 1962	Hydraulics Division Conference, Sacramento, California
October 8-12, 1962	ASCE, Detroit Convention
February 25-March 1, 1963	ASCE, Atlanta Convention

##### Non-ASCE Meetings

June 12-15, 1961	Symposium on Basic Research in Civil Engineering Fields Related to Water Resources, Fort Collins, Colorado. Sponsored jointly by ASCE, Bureau of Reclamation and Colorado State University
June 26-July 2, 1961	Seventh Congress International Committee on Large Dams, Rome, Italy
September 3-7, 1961	Ninth IAHR Convention, Belgrade, Yugoslavia
September 6-8, 1961	Seventh Midwestern Conference on Fluid Mechanics and Soil Mechanics, Michigan State University, East Lansing, Michigan

1961-17--12

HY 3

May, 1962

June 18-21, 1962

Fourth National Congress of Applied  
Mechanics, University of California  
Berkeley, California

### USE OF THE HYDRAULICS DIVISION NEWSLETTER

You are urged to use the Division Newsletter for announcements, inquiries, personnel news, committee reports, surveys and other items of interest to Division members. A short note summarizing the highlights of committee meetings is particularly requested. Suggestions for improvement of the Newsletter will be appreciated. All contributions are appreciated.

Deadline dates for Newsletter contributions: July 1961 issue--May 20; September 1961 issue--July 20.

Fred A. Bertle  
4475 Carr Street  
Wheat Ridge, Colorado

### CUMULATIVE INDEX TO ASCE PUBLICATIONS

A three-part index to Proceedings, Transactions, and CIVIL ENGINEERING is now available. This 816-page, 6 in. by 9 in., blue cloth bound book contains a subject and name index for CIVIL ENGINEERING that covers the magazine since its inception in 1930 through 1959. For Proceedings, the coverage is from 1950 through 1959, a period in which most papers were not included in Transactions. The 1935 through 1959 Transactions are indexed to provide a valuable source of reference to "modern" technical civil engineering literature.

The list price for this volume is \$20.00. Members of ASCE and public and school libraries are entitled to a 50% discount and will, therefore, pay \$10.00 per volume.

Order your copy of this INDEX by use of the coupon herewith.

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**SEWER DESIGN AND CONSTRUCTION MANUAL REPRINTED**

ASCE Manual 37 "Design and Construction of Sanitary and Storm Sewers," issued in early 1960 as a joint effort with the water Pollution Control Federation, has now been reprinted with corrections to several pages.

Those who have a copy of the 1960 edition can obtain, with the compliments of the Society, a reprint containing those pages that have been corrected for the 1961 printing. This reprint can be cut apart and the pages inserted into the previous edition.

The twelve-chapter manual contains 283 pages of text, 102 illustrations, tables, and 119 references. As the first extended collection of information on the subject, it will make a valuable reference in an important phase of wastewater technology. Individual subjects covered include organization and administration of sewer projects, surveys and investigations, quantity of sanitary sewage and storm water, hydraulics of sewers, design of sewer systems, appurtenances and special structures, materials for sewer construction, structural requirements, construction plans and specifications, construction methods, and pumping stations.

The manual may be ordered by use of the coupon herewith. The list price \$7.00 per copy; ASCE members and public and school libraries can order copies at a price of \$3.50 each. The price to members of WPCF is the same, on application to that organization.

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**MANUAL ON GROUND WATER BASIN MANAGEMENT**

The Committee on Ground Water of the Irrigation and Drainage Division has completed the newest in the series of ASCE Manuals on Engineering Practice. This Manual (No. 40) is concerned with the operation and management of ground water resources for irrigation and other beneficial uses. The Manual will find its field of greatest use in the planning of water development projects and in designing and programming facilities for the controlled

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May, 19

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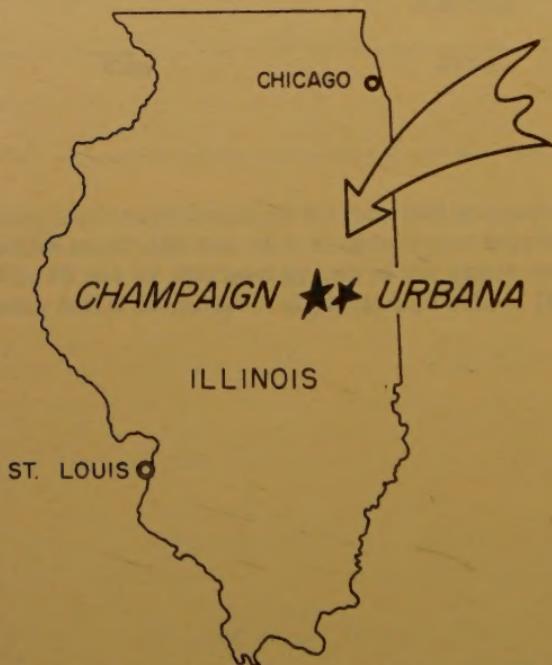
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conjunctive operation of surface and ground water reservoirs in order to  
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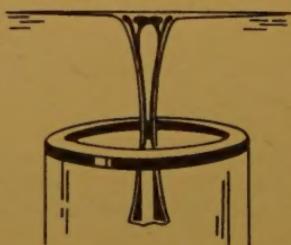


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AMERICAN SOCIETY OF CIVIL ENGINEERS



AUGUST  
16, 17, 18,  
1961



PLAN NOW TO ATTEND THIS CONFERENCE IN THE LAND OF LINCOLN  
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AND HYDRAULICS DIVISION NEWSLETTER

BE OUR GUESTS IN '61

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UNIVERSITY OF ILLINOIS



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